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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,098	04/13/2004	Kowang Liu	HT03-026	4539

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EXAMINER

CIRIC, LJILJANA V

ART UNIT	PAPER NUMBER
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3744

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/823,098	Applicant(s) LIU ET AL.	
	Examiner Ljiljana (Lil) V. Ciric <i>ARC</i>	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
4a) Of the above claim(s) 7-24 and 30-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 25-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20040526</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, readable on claims 1 through 6 and 25 through 29 in the reply filed on October 12, 2006 is acknowledged. The traversal is on the ground(s) that fields of search required for the various distinct inventions are necessarily coextensive. This is not found persuasive because, for example, the search required for the invention of Group I consists of fewer (and different) classes and subclasses than the search required for the inventions of Groups II and III.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 7 through 24 and 30 through 39 are hereby withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to non-elected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 16, 2006.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the heat source as recited in the claims must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be

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necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because it refers to the purported merits of the invention without summarizing the essential elements of the claimed invention (i.e., the essential structural elements of the heat extractor and the essential steps of the method of dissipating heat corresponding to the elected invention). Correction is required. See MPEP § 608.01(b).
5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is no antecedent basis in the specification for the heat source as recited in the claims.

Claim Objections

6. Claims 1 through 6 are objected to because of the following informalities: "heat" should be inserted immediately preceding "source" [claim 1, line 1] to provide proper antecedent basis for the limitation "said heat source" [claim 1, line 6]; "heat" should be inserted immediately preceding "source" [claim 6, line 1] for improved consistency. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 1 through 6 and 25 through 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The limitation “extends therefrom as far as said heat source” [claim 1, line 6; claim 25, line 5] is unclear as written, rendering indefinite claims 1 and 25, as well as all claims depending therefrom. First of all, it is not clear to which particular previously recited element(s) the term “therefrom” refers; recommend replacing the same with a direct recitation of the corresponding element(s). Second of all, it is not clear what is meant by “extends...as far as said heat source”. Is the intent to recite that the thermally conductive material layer and the heat source extend the same distance away from the element(s) referred to by “therefrom”? Or, is the intent to recite that the thermally conductive material layer extends between the heat source and the element(s) referred to by “therefrom”?

The term "about" appearing in claims 2 through 6 and 26 through 29 is a relative term which renders the claim indefinite. The term "about" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Thus, as used to qualify the various recited ranges, this term renders the same indeterminate and the claims indefinite.

It is not clear which alloys are encompassed and which ones are excluded by the term “and their mutual alloys” [claim 3, line 3; claim 27, line 3].

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. As best can be understood in view of the indefiniteness of the claims, claims 1, 3, 25, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakatani et al.

Nakatani et al. (i.e., Figures 7A and 7B) discloses a method of dissipating heat and a corresponding heat extractor essentially as claimed, including, for example: providing a thermally

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conductive pedestal or sheet 700 extending away from (i.e., “upward” as broadly interpreted as required) the substrate 702 and heat source 703; and, providing a layer of thermally conductive material (i.e., copper—see column 11, lines 44-59) that contacts the pedestal or sheet 700.

The reference thus reads on the claims.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. As best can be understood in view of the indefiniteness of the claims, claims 2, 4 through 6, 26, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatani et al.

As disclosed in greater detail above, Nakatani et al. discloses a heat dissipation method and a corresponding heat extractor essentially as claimed, but does not necessarily disclose the particular ranges of thermal conductivities, thermally conductive material thicknesses, pedestal cross-sectional areas, and heat source heat generating rates as recited in the claims. Nevertheless, absent a showing of unexpected results resulting therefrom, it would have been obvious to one skilled in the art at the time of invention to modify the heat dissipation method and corresponding heat extractor structure by varying the various dimensions and rates of heat generation or transmission in order to obtain the desired heat dissipation rates.

Conclusion


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ljiljana (Lil) V. Ciric whose telephone number is 571-272-4909. The examiner works a flexible schedule, but can normally be reached weekdays between 10:30 a.m. and 6:30 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl J. Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Ljiljana (Lil) V. Ciric
Primary Examiner
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